**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per.\_\_\_\_\_\_\_ Score:\_\_\_\_\_**

**U8 HW #1** *Introduction to Functions*

1. Betty’s Bakery makes cookies in different sizes measured by the diameter of the cookie in inches. Curious about the quality of their cookies, Betty and her assistant randomly chose cookies of different sizes and counted the number of chocolate chips in each cookie. The graph below shows the size of each cookie and the number of chocolate chips it contains.

|  |  |
| --- | --- |
| Diameter of Cookie (in)  *x* | # of Chocolate Chips  *y* |
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* 1. Complete the table to the right of the graph.
  2. Is the number of chocolate chips in a cookie a function of the diameter of the cookie? Justify your thinking.

1. The number of tires *y* in the parking lot at Hank’s Honda Dealership can be modeled by the equation where *x* represents the number of cars in the parking lot.
   1. Complete the table and graph below for this relationship.

|  |  |
| --- | --- |
| Number of cars  *x* | Number of tires  *y* |
|  |  |
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* 1. Is the number of tires a function of the number of cars? Why or why not?

1. The cost for cars entering a scenic by-way toll road in Wyoming is given by the mapping below. In this relation *y* is the dollar amount to enter the by-way and *x* is the number of passengers in the car.

|  |  |
| --- | --- |
| *x* | *y* |
| 1  2  3  4  4  8  12  16 | |

* 1. Complete the graph and table below for this relationship.

|  |  |
| --- | --- |
| Number of passengers  *x* | Amount per car (dollars)  *y* |
|  |  |
|  |  |
|  |  |
|  |  |

* 1. Is the amount spent per car a function of the number of passengers in the car? Why or why not?

1. The cost for cars entering a scenic by-way toll road in Utah is $5 regardless of the number of passengers in the car.
   1. Complete the graph and table below for this relationship.

|  |  |
| --- | --- |
| Number of passengers  *x* | Amount per car  *y* |
|  |  |
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|  |  |
|  |  |
|  |  |

* 1. Is the amount spent per car a function of the number of passengers in the car? Why or why not?

1. Create your own context or story that represents a relation. You can create a function or non-function.
   1. Story:
   2. Complete the graph and table below for this relationship.

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* 1. Explain why this relation is a function or not.

1. Write the equation of a line given the information in slope intercept form, y = mx + b. Show all work.

|  |  |
| --- | --- |
| * 1. m = -3/2 b = (0, 5) | * 1. m = 3 point on the line (2, 3) |
| * 1. (1, -6) and (-7, 2) | * 1. m = undefined point (-4, 0 ) |
| * 1. Image result for linear equations on a grid   Bonus: Write the equation in standard form: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |

“Your focus determines your reality.” – Qui-Gon Jinn